REMARKS

Claims 1, 3, 5-7, 9 and 11-14 are in this application and are presented for consideration. By this amendment, Applicant has amended claims 1, 5, 6, 11, 12 and 14.

Claim 6 has been objected to because of a minor informality.

Applicant has amended claim 6 to address this issue. Applicant wishes to thank the Examiner for the careful review of the claims and for the helpful suggestion.

Claims 1, 3, 6, 7, 9, 12 and 13 have been rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. (U.S. 2002/0187769).

The present invention relates to a wireless access method and a wireless system. The method and the system comprise performing point-to-multipoint type communication with a mobile radio terminal by providing a self-heterodyne RF transceiver in each of a plurality of access point stations. Point to point communication is performed with other access point stations by providing other self-heterodyne RF transceivers in each of the access point stations. The access point stations include a control access point station and a plurality of repeater access point stations. The control access point station delivers a first signal in a first RF frequency band to each mobile radio terminal located within a coverage area of the control access point and simultaneously transmits a second signal in a second RF frequency band to the first repeater access point station. The second repeater access point station converts and divides a reception signal in a RF frequency band into two signals in an IF frequency band and converts the two signals into a third signal in a third RF frequency band and a fourth signal in a fourth RF frequency band when the second repeater access point station receives the reception signal from

one of the first repeater access point station and the control access point station. The first, second, third and fourth RF frequency bands are different from each other. This advantageously decreases interference between the signals. This advantageously provides a wireless access system that requires only one control access station point. This significantly reduces the cost of constructing the wireless access system since only one control access point station is necessary. The prior art as a whole fails to disclose such features or such cost effective advantages.

Johnson et al. discloses a wireless cellular communication system that receives millimeter-wave signals from a central office and converts them to a cellular band for transmission by a cell base station. Each base station picks off the signals in its 32 MHz slice of a 91-93 GHz spectrum, down-converts this band to the cell phone band and broadcasts it. The 91-93 GHz band is also retransmitted to the next base station in the chain. At each base station a local oscillator is set to a slightly different frequency, which determines the 32 MHz wide slot that is assigned to that base station. If a spread-spectrum local oscillator was used on the up-conversion at the central office, then the appropriate pseudo random code must be used again in the down-converter's local oscillator to recover the original information. At the telephone company central switching office calls are detected, switched and routed between various cellular base stations and the landline network. Each group of cellular base stations at the central office is represented by a 32 MHz wide slot of spectrum, which is up-converted to the 91-93 GHz band and sent out over a point-to-point link to the chain of several base stations.

Johnson et al. fails to teach and fails to suggest the combination of a control access

point station that transmits a first signal in a first RF frequency band to each mobile radio terminal located within a coverage area of the control access point and simultaneously transmits a second signal in a second RF frequency band to a first repeater access point station. According to the present invention the first RF frequency band is different from the second RF frequency band. At most, Johnson et al. discloses a central telephone office that transmits millimeter-wave signals to base stations. However, the central telephone office of Johnson does not transmit two different signals wherein the signals have different RF frequency bands. Compared with Johnson et al., the control access point station transmits two different signals wherein one signal in one RF frequency band is transmitted to one or more mobile radio terminals and another signal in another RF frequency band is transmitted to a first repeater access point station. This advantageously reduces the cost of constructing the wireless access system since only one control access point station is required. Johnson et al. does not disclose such cost-saving advantages since Johnson et al. only discloses that the central telephone office transmits signals to base stations, but the central telephone office does not transmit another signal to one or more mobile radio terminals within a coverage area of the central telephone office as claimed. As such, the prior art as a whole fails to teach or suggest each feature of the claimed combination.

Johnson et al. also fails to teach and fails to suggest the combination of a second repeater access point station that converts and divides a reception signal in a RF frequency band into two signals in an IF frequency band wherein the two signals are converted into a third signal in a third RF frequency band and a fourth signal in a fourth RF frequency band. Johnson

et al. only discloses a system that receives millimeter-wave signals from a central office and converts them to a cellular band for transmission by a cell base station. The Office Action takes the position that paragraph [0033] of Johnson et al. discloses a second repeater access point station that divides a signal as claimed. Applicant respectfully disagrees with this interpretation of Johnson et al. At most, paragraph [0033] of Johnson et al. discloses that each base station picks off the signals in its 32 MHz slice of a 91-93 GHz spectrum, down-converts this band to a cell phone band and broadcasts it while the 91-93 GHz is retransmitted to the next base station. However, Johnson et al. fails to disclose any teaching that the base station divides the 91-93 GHz signal into two separate signals that have two different RF frequency bands as claimed. In contrast to the present invention, Johnson et al. merely discloses that the base stations act as relays to transmit the same signal from one base station to another station wherein each base station receives signals within a particular frequency range. Compared with Johnson et al., one access point station of the present invention splits a signal received from another access point station wherein one of the signals is sent to each mobile radio terminal at the same time that the other signal is transmitted to another one of the access point stations. This significantly reduces costs of constructing the wireless access system since only one control access point station is required instead of a plurality of control access point stations as provided in conventional techniques. Johnson et al. fails to disclose such cost-saving advantages since Johnson et al. only discloses that the base stations act as relays, which do not split any signal as claimed. As such, the prior art as a whole takes a different approach and fails to teach or suggest each feature of the claimed combination. Accordingly, Applicant

respectfully requests that the Examiner favorably consider claims 1, 6 and 12 as now presented and all claims that respectively depend thereon.

Claims 5, 11 and 14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. In view of NPL document "Millimeter-wave Ad-hoc Wireless Access System" (hereinafter "NPL1"). Although NPL1 discloses a millimeter-wave ad-hoc wireless access system, the references as a whole fail to teach or suggest each feature of the claimed combination. Specifically, Johnson et al. fails to provide any teaching or suggestion for the combination of a control access point station that transmits two different signals in two different RF bands as claimed. As such, all claims define over the prior art as a whole.

Favorable action on the merits is requested.

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